# Skills Practice

*Today’s practice focuses on standard MM2A4, parts a and b. Here’s the complete standard:*

MM2A4. Students will solve quadratic equations and inequalities in one variable.

1. Solve equations graphically using appropriate technology.
2. Find real and complex solutions of equations by factoring, taking square roots, and applying the quadratic formula.
3. Analyze the nature of roots using technology and using the discriminant.
4. Solve quadratic inequalities both graphically and algebraically, and describe the solutions using linear inequalities.

*Directions: Solve the problems on this page and indicate your solution method, graphical or algebraic. You should solve at least 5 problems each way. Grading:* *Correct answers on this classwork are worth as follows: #1-8 and #12-15 are 5 points each and #9-11 are 15 points each.*

Factor the following functions. If it cannot be factored, say so:

1. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
2. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
3. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
4. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
5. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
6. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
7. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
8. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic

Find the answers to the following questions:

1. A gym charges $180 for a yearly membership. There are currently 1000 members. For every $5 increase in price, the gym will lose 10 members. How much should the gym charge to maximize its revenue? Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
2. On a recent road trip, you drove a distance of 90 miles at a constant speed. If you had driven 15 miles per hour faster, your travel time would have been reduced by 0.5 hour. What was your original speed? Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
3. Find the radius of a circle whose area is . (Hint: What is the equation for area of a circle?) Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic

*Solve* the following equations:

1. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
2. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
3. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic
4. Your solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Graphical or algebraic